

SEQUENCE LISTING

<110> KWEE, YONG
KOSAKA, MASAAKI
KOISHIHARA, YASUO

<120> HM1.24-UTILIZING CANCER VACCINES

<130> 053466-0401

<140> 10/533,104
<141> 2005-04-28

<150> PCT/JP03/13954
<151> 2003-10-30

<150> JP 2002-316639
<151> 2002-10-30

<160> 23

<170> PatentIn Ver. 3.3

<210> 1
<211> 109
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA comprising leader sequence and HA coding sequence

<400> 1
aattccacc atggatgga gctgtatcat ccttttttg gtagcaacag ctacagggtgt 60
ccactcatac ccatacgacg tccccacta cgctggtacc gcggccgcg 109

<210> 2
<211> 109
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic DNA comprising leader sequence and HA coding sequence

<400> 2
gatccgcggc cgccgtacca gcgttgtctg ggacgtcgta tgggtatgag tggacacctg 60
tagctgttgc taccagaag aggtatatac agtccatcc catgggg 109

<210> 3
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 3
taaaggtaacc aacagcgagg cctgccc

27

<210> 4
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 4
ctgctgcagt gagatccca gatccata

28

<210> 5
<211> 396
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(396)

<220>
<223> Nucleotide sequence of extracellular domain of
soluble HM 1.24 antigenic protein

<400> 5
aac agc gag gcc tgc cgg gac ggc ctt cgg gca gtg atg gag tgt cgc 48
Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
1 5 10 15

aat gtc acc cat ctc ctg caa caa gag ctg acc gag gcc cag aag ggc 96
Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
20 25 30

ttt cag gat gtg gag gcc cag gcc acc tgc aac cac act gtg atg 144
Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
35 40 45

gcc cta atg gct tcc ctg gat gca gag aag gcc caa gga caa aag aaa 192
Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
50 55 60

gtg gag gag ctt gag gga gag atc act aca tta aac cat aag ctt cag 240
Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
65 70 75 80

gac gcg tct gca gag gtg gag cga ctg aga aga gaa aac cag gtc tta 288
Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
85 90 95

agc gtg aga atc gcg gac aag aag tac tac ccc agc tcc cag gac tcc	336
Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser	
100	105
110	
agc tcc gct gcg gcg ccc cag ctg ctg att gtg ctg ctg ggc ctc agc	384
Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser	
115	120
125	
gct ctg ctg cag	396
Ala Leu Leu Gln	
130	
<210> 6	
<211> 30	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Description of Artificial Sequence: Synthetic primer	
<400> 6	
ataggatcct caagcggagc tggagtcctg	30
<210> 7	
<211> 345	
<212> DNA	
<213> Homo sapiens	
<220>	
<221> CDS	
<222> (1) .. (345)	
<220>	
<223> Nucleotide sequence of extracellular domain of C-terminal lacking soluble HM 1.24 antigenic protein	
<400> 7	
aac agc gag gcc tgc cgg gac ggc ctt cgg gca gtg atg gag tgt cgc	48
Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg	
1	5
10	15
aat gtc acc cat ctc ctg caa caa gag ctg acc gag gcc cag aag ggc	96
Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly	
20	25
30	
ttt cag gat gtg gag gcc cag gcc acc tgc aac cac act gtg atg	144
Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met	
35	40
45	
gcc cta atg gct tcc ctg gat gca gag aag gcc caa gga caa aag aaa	192
Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys	
50	55
60	

gtg gag gag ctt gag gga gag atc act aca tta aac cat aag ctt cag 240
 Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
 65 70 75 80

gac gcg tct gca gag gtg gag cga ctg aga aga gaa aac cag gtc tta 288
 Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
 85 90 95

```

agc gtg aga atc gcg gac aag aag tac tac ccc agc tcc cag gac tcc 336
Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
          100           105           110

```

agc tcc gct 345
Ser Ser Ala
115

```
<210> 8
<211> 32
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 8
ggatcttgg tcatattctcaa gcctcagaca gt 32

```
<210> 9
<211> 30
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 9
cctcagactc ggccctgaccc gtggaaagaa 30

```
<210> 10
<211> 429
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence coding for a fusion protein
comprising HA peptide and soluble HM 1.24
antigenic protein

<220>

<221> CDS

<222> (1)..(429)

<400> 10

tac cca tac gac gtc cca gac tac gct ggt acc aac agc gag gcc tgc	48
Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Thr Asn Ser Glu Ala Cys	
1 5 10 15	

cgg gac ggc ctt cgg gca gtg atg gag tgt cgc aat gtc acc cat ctc	96
Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu	
20 25 30	

ctg caa caa gag ctg acc gag gcc cag aag ggc ttt cag gat gtg gag	144
Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu	
35 40 45	

gcc cag gcc gcc acc tgc aac cac act gtg atg gcc cta atg gct tcc	192
Ala Gln Ala Ala Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser	
50 55 60	

ctg gat gca gag aag gcc caa gga caa aag aaa gtg gag gag ctt gag	240
Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Val Glu Glu Leu Glu	
65 70 75 80	

gga gag atc act aca tta aac cat aag ctt cag gac gcg tct gca gag	288
Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu	
85 90 95	

gtg gag cga ctg aga aga gaa aac cag gtc tta agc gtg aga atc gcg	336
Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala	
100 105 110	

gac aag aag tac tac ccc agc tcc cag gac tcc agc tcc gct gcg gcg	384
Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser Ser Ala Ala Ala	
115 120 125	

ccc cag ctg ctg att gtg ctg ctg ggc ctc agc gct ctg ctg cag	429
Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser Ala Leu Leu Gln	
130 135 140	

<210> 11

<211> 378

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
nucleotide sequence coding for a fusion protein
comprising HA peptide and C-terminal lacking
soluble HM 1.24 antigenic protein

<220>

<221> CDS

<222> (1)..(378)

```

<400> 11
tac cca tac gac gtc cca gac tac gct ggt acc aac agc gag gcc tgc 48
Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Thr Asn Ser Glu Ala Cys
   1           5           10          15

cgg gac ggc ctt cgg gca gtg atg gag tgt cgc aat gtc acc cat ctc 96
Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu
   20          25          30

ctg caa caa gag ctg acc gag gcc cag aag ggc ttt cag gat gtg gag 144
Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu
   35          40          45

gcc cag gcc gcc acc tgc aac cac act gtg atg gcc cta atg gct tcc 192
Ala Gln Ala Ala Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser
   50          55          60

ctg gat gca gag aag gcc caa gga caa aag aaa gtg gag gag ctt gag 240
Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu
   65          70          75          80

gga gag atc act aca tta aac cat aag ctt cag gag gcg tct gca gag 288
Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu
   85          90          95

gtg gag cga ctg aga aga gaa aac cag gtc tta agc gtg aga atc gcg 336
Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala
  100         105         110

gac aag aag tac tac ccc agc tcc cag gac tcc agc tcc gct 378
Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser Ser Ser Ala
  115         120         125

```

```
<210> 12
<211> 379
<212> DNA
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence coding for L chain V region
version a of humanized anti-HM 1.24 antibody

<220>
<221> CDS
<222> (1) . . (378)

```
<220>
<221> sig_peptide
<222> (1)..(57)
```

<220>
<221> mat_peptide
<222> (58) .. (378)

```
<210> 13  
<211> 418  
<212> DNA  
<213> Artificial Sequence
```

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence coding for H chain V region
version r of humanized anti-HM 1.24 antibody

<220>
<221> CDS
<222> (1) . . (417)

<220>
<221> sig_peptide
<222> (1) (57)

<220>

<222> (58) .. (417)

<400> 13
atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt 48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15 -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag 96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1 1 10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc 144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15 20 25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt 192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
30 35 40 45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt 240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50 55 60

cag aag ttc aag ggc aga gtc acc atg acc gca gac aag tcc acg agc 288
Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser
65 70 75

aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg 336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
80 85 90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac 384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
95 100 105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g 418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110 115 120

<210> 14
<211> 418
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
nucleotide sequence coding for H chain V region
version s of humanized anti-HM 1.24 antibody

<220>
<221> CDS
<222> (1)..(417)

<220>
<221> sig_peptide
<222> (1)..(57)

```

<220>
<221> mat_peptide
<222> (58)..(417)

<400> 14
atg gac tgg acc tgg agg gtc ttc ttc ttg ctg gct gta gct cca ggt      48
Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
-15          -10           -5

gct cac tcc cag gtg cag ctg gtg cag tct ggg gct gag gtg aag aag      96
Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
-1     1           5           10

cct ggg gcc tca gtg aag gtt tcc tgc aag gca tct gga tac acc ttc      144
Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
15          20           25

act ccc tac tgg atg cag tgg gtg cga cag gcc cct gga caa ggg ctt      192
Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
30          35           40           45

gag tgg atg gga tct att ttt cct gga gat ggt gat act agg tac agt      240
Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
50          55           60

cag aag ttc aag ggc aga gtc acc atc acc gca gac aag tcc acg agc      288
Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser
65          70           75

aca gcc tac atg gag ctg agc agc ctg aga tct gag gac acg gcc gtg      336
Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
80          85           90

tat tac tgt gcg aga gga tta cga cga ggg ggg tac tac ttt gac tac      384
Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
95          100          105

tgg ggg caa ggg acc acg gtc acc gtc tcc tca g                      418
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
110         115          120

```

<210> 15

<211> 1014

<212> DNA

<213> Homo sapiens

<220>

<223> Nucleotide sequence coding for human HM 1.24
antigenic protein expressed on cell membrane

<220>

<221> CDS

<222> (23)..(562)

<400> 15
 gaattcggca cgagggatct gg atg gca tct act tcg tat gac tat tgc aga 52
 Met Ala Ser Thr Ser Tyr Asp Tyr Cys Arg
 1 5 10

gtg ccc atg gaa gac ggg gat aag cgc tgt aag ctt ctg ctg ggg ata 100
 Val Pro Met Glu Asp Gly Asp Lys Arg Cys Lys Leu Leu Leu Gly Ile
 15 20 25

gga att ctg gtg ctc ctg atc atc gtg att ctg ggg gtg ccc ttg att 148
 Gly Ile Leu Val Leu Ile Ile Val Ile Leu Gly Val Pro Leu Ile
 30 35 40

atc ttc acc atc aag gcc aac agc gag gcc tgc cgg gac ggc ctt cgg 196
 Ile Phe Thr Ile Lys Ala Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg
 45 50 55

gca gtg atg gag tgt cgc aat gtc acc cat ctc ctg caa caa gag ctg 244
 Ala Val Met Glu Cys Arg Asn Val Thr His Leu Leu Gln Gln Glu Leu
 60 65 70

acc gag gcc cag aag ggc ttt cag gat gtg gag gcc cag gcc gcc acc 292
 Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu Ala Gln Ala Ala Thr
 75 80 85 90

tgc aac cac act gtg atg gcc cta atg gct tcc ctg gat gca gag aag 340
 Cys Asn His Thr Val Met Ala Leu Met Ala Ser Leu Asp Ala Glu Lys
 95 100 105

gcc caa gga caa aag aaa gtg gag gag ctt gag gga gag atc act aca 388
 Ala Gln Gly Gln Lys Val Glu Glu Leu Glu Gly Glu Ile Thr Thr
 110 115 120

tta aac cat aag ctt cag gac gcg tct gca gag gtg gag cga ctg aga 436
 Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu Val Glu Arg Leu Arg
 125 130 135

aga gaa aac cag gtc tta agc gtg aga atc gcg gac aag aag tac tac 484
 Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr
 140 145 150

ccc agc tcc cag gac tcc agc tcc gct gcg gcg ccc cag ctg ctg att 532
 Pro Ser Ser Gln Asp Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile
 155 160 165 170

gtg ctg ctg ggc ctc agc gct ctg ctg cag tgagatccca ggaagctggc 582
 Val Leu Leu Gly Leu Ser Ala Leu Leu Gln
 175 180

acatcttggaa aggtccgtcc tgctcgctt ttgcgttgaa cattcccttg atctcatcag 642

ttctgagcgg gtcatggggc aacacggta gcggggagag cacgggttag ccggagaagg 702

gcctctggag caggtctgga gggccatgg ggcagtctg ggtgtggga cacagtcggg 762

ttgacccagg gctgtctccc tccagagcct ccctccggac aatgagtccc ccctcttgtc 822

tccccccctg agattggca tggggtgccg tgggggggc atgtgctgcc tgggttatg 882

```
gggtttttttt gcggggggggg ttgctttttt ctgggggtctt tgagctccaa aaaaataaac 942  
acttcctttg agggagagca caccttaaaaa aaaaaaaaaaa aaaaaaaaaaa aaaaaaaattc 1002  
gggcggccgc ca 1014
```

<210> 16
<211> 132
<212> PRT
<213> *Homo sapiens*

<220>
<223> Amino acid sequence of soluble HM 1.24
antigenic protein

<400> 16
Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
1 5 10 15

Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
20 25 30

Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
35 40 45

Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
50 55 60

Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
65 70 75 80

Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
85 90 95

Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
100 105 110

Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser
115 120 125

Ala Leu Leu Gln
130

<210> 17
<211> 115
<212> PRT
<213> *Homo sapiens*

<220>
<223> Amino acid sequence of extracellular Downing of
C-terminal lacking soluble HM 1.24 antigenic
protein

<400> 17
Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
1 5 10 15
Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
20 25 30
Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
35 40 45
Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
50 55 60
Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
65 70 75 80
Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
85 90 95
Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
100 105 110
Ser Ser Ala
115

<210> 18
<211> 143
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
amino acid sequence of a fusion protein
comprising HA peptide and soluble HM 1.24
antigenic protein

<400> 18
Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Thr Asn Ser Glu Ala Cys
1 5 10 15
Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu
20 25 30
Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu
35 40 45
Ala Gln Ala Ala Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser
50 55 60
Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu
65 70 75 80
Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu
85 90 95
Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala
100 105 110

Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser Ser Ser Ala Ala Ala
115 120 125

Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser Ala Leu Leu Gln
130 135 140

<210> 19
<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
amino acid sequence of a fusion protein
comprising HA peptide and C-terminal lacking
soluble HM 1.24 antigenic protein

<400> 19
Tyr Pro Tyr Asp Val Pro Asp Tyr Ala Gly Thr Asn Ser Glu Ala Cys
1 5 10 15

Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg Asn Val Thr His Leu
20 25 30

Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly Phe Gln Asp Val Glu
35 40 45

Ala Gln Ala Ala Thr Cys Asn His Thr Val Met Ala Leu Met Ala Ser
50 55 60

Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys Val Glu Glu Leu Glu
65 70 75 80

Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln Asp Ala Ser Ala Glu
85 90 95

Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu Ser Val Arg Ile Ala
100 105 110

Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser Ser Ser Ala
 115 120 125

<211> 126
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
amino acid sequence of L chain V region
version a of humanized anti-HM 1.24 antibody

<400> 20
Met Gly Trp Ser Cys Ile Ile Leu Ser Leu Val Ala Thr Ala Thr Gly
-15 -10 -5

Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 -1 1 5 10

 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Asp Val
 15 20 25

 Asn Thr Ala Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
 30 35 40 45

 Leu Leu Ile Tyr Ser Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
 50 55 60

 Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
 65 70 75

 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln His Tyr Ser
 80 85 90

 Thr Pro Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 95 100 105

<210> 21

<211> 139

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
amino acid sequence coding of H chain V region
version r of humanized anti-HM 1.24 antibody

<400> 21

Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser
 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 22
 <211> 139
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 amino acid sequence of H chain V region
 version s of humanized anti-HM 1.24 antibody

<400> 22
 Met Asp Trp Thr Trp Arg Val Phe Phe Leu Leu Ala Val Ala Pro Gly
 -15 -10 -5

Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
 -1 1 5 10

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 15 20 25

Thr Pro Tyr Trp Met Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
 30 35 40 45

Glu Trp Met Gly Ser Ile Phe Pro Gly Asp Gly Asp Thr Arg Tyr Ser
 50 55 60

Gln Lys Phe Lys Gly Arg Val Thr Ile Thr Ala Asp Lys Ser Thr Ser
 65 70 75

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 80 85 90

Tyr Tyr Cys Ala Arg Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr
 95 100 105

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 110 115 120

<210> 23
 <211> 180
 <212> PRT
 <213> Homo sapiens

<220>
 <223> Amino acid sequence of human HM 1.24
 antigenic protein expressed on cell membrane

<400> 23
 Met Ala Ser Thr Ser Tyr Asp Tyr Cys Arg Val Pro Met Glu Asp Gly
 1 5 10 15

Asp Lys Arg Cys Lys Leu Leu Leu Gly Ile Gly Ile Leu Val Leu Leu
 20 25 30

Ile Ile Val Ile Leu Gly Val Pro Leu Ile Ile Phe Thr Ile Lys Ala
35 40 45

Asn Ser Glu Ala Cys Arg Asp Gly Leu Arg Ala Val Met Glu Cys Arg
50 55 60

Asn Val Thr His Leu Leu Gln Gln Glu Leu Thr Glu Ala Gln Lys Gly
65 70 75 80

Phe Gln Asp Val Glu Ala Gln Ala Ala Thr Cys Asn His Thr Val Met
85 90 95

Ala Leu Met Ala Ser Leu Asp Ala Glu Lys Ala Gln Gly Gln Lys Lys
100 105 110

Val Glu Glu Leu Glu Gly Glu Ile Thr Thr Leu Asn His Lys Leu Gln
115 120 125

Asp Ala Ser Ala Glu Val Glu Arg Leu Arg Arg Glu Asn Gln Val Leu
130 135 140

Ser Val Arg Ile Ala Asp Lys Lys Tyr Tyr Pro Ser Ser Gln Asp Ser
145 150 155 160

Ser Ser Ala Ala Ala Pro Gln Leu Leu Ile Val Leu Leu Gly Leu Ser
165 170 175

Ala Leu Leu Gln
180